Remarks and Arguments:

The rejection of claims 10-14 under 35 USC 102(b) as being anticipated by Kaplan (U.S. Patent 5,664,419) is respectfully traversed. Kaplan discloses and claims process for power generation from geothermal sources comprising separating the two phases (steam and liquid brine) of the geothermal fluid source, and using the steam phase to drive a Rankine Cycle using a single-component organic working fluid. In contrast, the essence of power cycle of the present invention is the use of a two component, ammonia-water working fluid.

The use of a two-component non-azeotrope-forming fluid mixture imparts several important advantages to a power cycle. Such a mixture boils when heated, e.g. is converted from liquid to vapor, over a temperature range which can be quite large, in excess of 150°F (at constant pressure). In contrast, a pure component will be heated to its boiling temperature, and converted to vapor at a constant temperature until all of the liquid "boils away". This characteristic extended "boiling temperature" range allows more complete heat transfer in a heat exchanger–see, for example, the discussion on pp. 4&5 of Thoren, "Power Cycles with Ammonia-water Mixtures as Working Fluid", (submitted to the PTO June 23, 2006 with an Information Disclosure Statement by Applicant). This characteristic also allows the exit temperature of the "cool-side" fluid in a countercurrent heat exchanger to exceed the "bubble point" temperature–i.e., the temperature at which "boiling" of the working fluid commences. It is this "temperature-cross" effect which allows operation of recuperator **31** (Fig. 4 of the present application) so as to partially vaporize the working fluid exiting feed pump **30**. It also reduces the amount of cooling fluid required to fully condense the working fluid in condenser **36**, and permits raising the temperature of said cooling fluid to a higher temperature than would be the case for a Rankine cycle using a single component working fluid. This higher exit temperature could facilitate the use of said heated cooling fluid for applications such as building heating, domestic hot water heating, etc.

It is clear that the use of ammonia-water as a working fluid in a power cycle differs fundamentally from use of a single component working fluid such as taught and claimed in Kaplan, and Kaplan may not be considered to anticipate the invention of the present application.

It must be reiterated that use of similar components, or similarly-named components, in different processes or methods does not render the processes similar or identical. Claims 10-14 of the present application are Method claims. Fungible components such as feed pumps and heat exchangers (including recuperators, pre-heaters, superheaters, condensers, etc.), are ubiquitous in heat utilization and power generating applications. The mere presence of such components in the description or embodiment of one process or apparatus does not automatically render any other process or application employing such components unpatentable under 35 USC 102 or 103. The novelty of a process or apparatus may lie in the means by which the generic components are interconnected and operated.

The rejection of Claims 15-17 under 35 USC 103(a) as being patentable over Kaplan in

view of Kalina (U.S. Patent 4,548,043) is also respectfully traversed. For an invention to be considered obvious with respect to a combination of disclosures, there must be some teaching, suggestion, or motivation in the disclosures to do so. (In re Kahn, 441 F.3d 977, 986, 78 USPQ2d 1329, 1335, Fed. Cir. 2006, discussing rationale underlying the motivation-suggestion-teaching requirement as a guard against using hindsight in an obviousness analysis, as cited in MPEP, 8th Edition, Revision 5, §2143.01).

There is no such teaching, suggestion, or motivation apparent in Kaplan to use the two-component working fluid of Kalina or the present invention in his disclosed and claimed process–see his Claim 1 ¶(b), which appears to teach against using a two-component working fluid.

Nor is there any motivation-suggestion-teaching in Kalina to use the two-component ammonia-water system in a relatively simple cycle such as the cycle taught in the present application. In particular, the Kalina process involves at least one step of separating condensed liquid from uncondensed vapor followed by separate streams for further processing of condensate and vapor. (See, for example, the discussion on p. 6 of Thoren, *op cit.*).

It should be borne in mind that, although Kalina was patented in 1985, no further disclosures of the use of the ammonia-water system except in the Kalina process could be found.

The rejection of Claims 10-17 under 35 USC 103(a) over Maisotsenko *et al* (U.S. Patent 7,007,453 is also respectfully traversed. The motivation-suggestion-teaching which would lead one to combine Maisotsenko with Kalina appears to be lacking from either Maisotsenko or Kalina.

It is believed that the remarks and arguments presented above establish the patentable distinction between the processes disclosed, taught and/or claimed by Kaplan, Kalina or Maisotsenko and the process and apparatus of the present application, and overcome the rejections of the Office Action of January 3, 2007 and place the present application in condition for allowance.